DOCUMENT RESUME

ED 214 636 PS 012 722

AUTHOR Robins, Lee N.
TITLE Research on Substance Abuse: Alcohol, Drugs, Tobacco. Matrix No. 14.
INSTITUTION Administration for Children, Youth, and Families (DHHS), Washington, D.C.
PUB DATE Jan 82
NOTE 21p.; Paper presented at the Research Forum on Children and Youth (Washington, DC, May 18-19, 1981). For related documents, see ED 213 518-526, PS 012 713-715, PS 012 717-718 and PS 012 723-725.
AVAILABLE FROM Administration for Children, Youth, and Families, P.O. Box 1182, Washington, DC 20013 (no price quoted).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Adolescents; *Alcoholism; *Children; Delinquency; *Drug Abuse; *Illegal Drug Use; Literature Reviews; Marihuana; Motivation; Psychopathology; Sex Differences; Smoking; Socioeconomic Status; *Tobacco

ABSTRACT

In the last few years, a vast amount of research has accumulated with respect to American children's use of legal and illicit drugs. This research has included cross-sectional studies (which have attempted to determine current drug usage, age of onset for each drug used, and maximum frequency of use in the lifetime); longitudinal studies (which have attempted to predict which children would become future drug users); and other evaluation studies (which have searched for ways to prevent or reduce drug use). Indeed, today we know more about children's drug use than we know about any other type of adolescent psychopathology. However, it is not clear to what extent illicit drug use is psychopathology. The present paper, after reviewing what is known about the frequency with which various types of drugs are used by young people, raises the question of the extent to which illicit drug use appears to be pathological, either in terms of its predictors or its consequences. Topics reviewed include age at first use, popularity of different drug classes, motivation for use, heavy drug use, trends in use, correlates and predictors of drug use (e.g., sex differences and socioeconomic status), and drug users compared with delinquents. (Author/MP)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED214636

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

MATRIX NO. 14

RESEARCH ON SUBSTANCE ABUSE: ALCOHOL, DRUGS, TOBACCO

by

Lee N. Robins, Ph.D.
Department of Psychiatry
Washington University School of Medicine
St. Louis, Missouri

PS 01 2722

PAPERS
PRESENTED AT
THE RESEARCH FORUM
ON
CHILDREN AND YOUTH

May 18-19, 1981

Convened in Washington, D.C.

Sponsored by

Federal Interagency Panel on Early Childhood Research and Development

Federal Interagency Panel for Research and Development on Adolescence

Publication Date: January 1982

Research, Demonstration and Evaluation Division
Administration for Children, Youth and Families
Office of Human Development Services
U.S. Department of Health and Human Services

Papers available from: ACYF
P.O. Box 1182
Washington, DC 20013

RESEARCH ON SUBSTANCE ABUSE: ALCOHOL, DRUGS, TOBACCO*

In the last few years, a vast amount of research has accumulated with respect to American children's use of legal and illicit drugs. It has included cross-sectional studies, reporting current use, age of onset for each drug used, and maximum frequency of use in the lifetime. Longitudinal studies have attempted to predict which children would become future users, and there also have been a number of evaluations of efforts to prevent or reduce future use. Indeed, we probably now know more about children's drug use than we know about any other type of adolescent psychopathology. But it is not clear to what extent illicit drug use *is* psychopathology. The present paper will review what we now know about the frequency with which various types of drugs are used by young people, and will then raise the question of the extent to which this drug use appears to be pathological, either in terms of its predictors or its consequences.

In describing the distribution of drug use, I rely particularly upon the study by Lloyd Johnston of series of nationwide cohorts of high school seniors.[1] His study provided not only overall prevalence of drug use, but also its distribution by geographic region, city size, and sex. This study also provides information about the natural history of drug use, since it provides information on the typical age of first use, and tells us how many of those who have ever used drugs have continued that use to the present. Because the study has been repeated for six cohorts, we can learn from it how drug use by young people has changed over time. While the study is unique in having annual data for 6 years for a large national sample, it has the drawback that it covers only that portion of youth who remained in school through the 12th grade. The degree to which omitting high school dropouts affects the results can be estimated by comparing its results to results obtained by John O'Donnell *et al.*[2] from a national sample of young men, as well as our own studies of adolescent drug use in young blacks[3] and veterans of the Vietnam War.[4] These studies, plus the follow-up studies done by Denise Kandel[5] in a sample of New York state high schools, by Richard and Shirley Jessor[6] in Colorado high school and college students, and by Gene Smith in Boston elementary and high school students,[7] also provide some information about drug users prior to their taking drugs, and thus may give us clues to the causes of drug abuse.

Studies of high school and college students tell us more about the use of drugs than about their abuse. The number of abusers found in general samples of young people is usually too small to allow statistical analysis. Further, the development of problems usually requires time. Since the most common years of onset of illicit drug use are near the end of adolescence, problems with drug use are more common among young adults than among adolescents. However, if we stretch our definition of adolescents to ages 19 to 20, we can take advantage of our study of Vietnam veterans, who had extraordinary exposure to marijuana, opium, and heroin while in Vietnam, to learn something about predictors of addiction in a high-risk setting.

---

*Supported in part by USPHS Grants DA 00013, DA 00259, MH 31302, MH 18864, and DA 4RG008.

Age at First Use

Before age 16, the purchase of even legal drugs is generally forbidden in the United States. While age of legal purchase is determined at the local level, and therefore differs from one area to the next, cigarette purchases generally are not legal before age 16, and alcohol purchases not before age 18 or 21. However, the typical first *use* of legal drugs occurs prior to the age at which they can be legally purchased, and the use of illicit drugs is almost always preceded by the use of legal drugs. It is also true in the United States that, although the public has been much more concerned about the use of illicit than legal drugs, it is the legal drug alcohol that causes adolescents the greatest difficulties. (Of course, the same is true of adults, as well.)

TABLE 1

Cumulative Experience with Drugs By Age and Grade:
1980 High School Seniors (Johnston)
Cumulative Percentages of Ever Used:

Grade	Age	Alcohol	Cigarettes	Marijuana	Inhalants	Stimulants	Sedatives	Opiates	Cocaine
By 6th Grade	11	8	3	2	1	*	*	*	*
By 8th Grade	13	30	10	15	4	2	1	1	1
By 9th Grade	14	(55)	(16)	(31)	6	6	4	3	2
By 10th Grade	15	74	21	46	(8)	(13)	(7)	(5)	6
By 11th Grade	16	86	24	56	10	20	12	8	(17)
By 12th Grade	17	93	26	60	12	26	15	10	16

* = <.5%
( ) = Median age of first use.

In Table 1, we note that the median age of first use among those who will use alcohol, cigarettes, and marijuana before graduating from high school is age 14. (The circles in Table 1 surround those cumulative percentages that include 50% of users. The percentages circled read less than 50% for drugs other than alcohol because they are based on the total population, not users only.) Most illicit drugs are first used a year later on the average – about age 15. The only drug that is typically first used later than 15 is cocaine, probably due to two reasons: (1) it is an expensive drug, and therefore may not be affordable by younger children, and (2) its popularity is recent. Newly popular drugs are typically tried first by children already familiar with most previously used drugs, who of course tend to be older users who have had time to experiment widely.

Popularity of Different Drug Classes

A look at the bottom line of Table 1 shows which drugs are more popular among adolescents, regardless of when they are used first. Alcohol is far and away the most commonly used drug, by 93% of adolescents before finishing high school. The table shows daily use of cigarettes, and so the cigarette column is not comparable to the others. Cigarettes were tried by 71% before graduation. Marijuana is the most frequently used of the illicit drugs, now having been used by more than half of high school graduates – 60%. Alcohol, cigarettes, and marijuana are the only drugs used by a majority of students. Stimulants other than cocaine are next in popularity, used by one-quarter, and cocaine has been used by one in six.

This pattern of popularity among various drugs is not unique to high school seniors. Table 2 compares figures for male high school seniors with John O'Donnell's results[8] from a national survey of men 20 to 30 selected from draft registration records, which includes men at all levels of education. The first year of Johnston's study, 1975, is used in the comparison because that is the year that O'Donnell's data were collected. The rank ordering of the drugs by popularity of use is remarkably similar in the two studies, although rates of *illicit* drug use are somewhat lower in the O'Donnell study. The lower rate probably occurs because the oldest men in that study were hardly exposed to the drug epidemic that began in the late 1960s. John O'Donnell's study (as did our study of Vietnam veterans and nonveteran controls[9]) found that the age of risk of using drugs for the first time usually ends about age 25.

TABLE 2

Annual Prevalence of Drug Use in Males

	Johnston's Male High School Seniors 1975 (N = 9400) %	O'Donnell: A National Sample of Men Ages 20-30 1964-75 (N = 2510) %
Alcohol	87	92
Marijuana	45	38
Hallucinogens	14	7
Stimulants	16	12
Sedatives	13	9
Heroin	1	2
Other opiates	6	10
Cocaine	7	7

Denise Kandel,[10] in surveying New York State high school students, found that the popularity of drugs reflected the order in which they were used, with the more commonly used drugs being used before the less commonly used. Thus, drug use approximated a Gutman scale. The first drug used was almost always cigarettes, beer, or wine. A proportion of children using these then went on to the use of hard liquor. A portion of those who used hard liquor then went on to marijuana, and some of those who used marijuana went on to try stimulants, sedatives, or tranquilizers. Finally, some of the users of these pills went on to opiates.

One of the current battles about the degree to which marijuana use is dangerous grows out of this observation of successive stages of drug use. Since users of hard drugs come almost entirely from those who have already used marijuana, the question is debated as to whether marijuana causes drug addiction. Those who say "yes" point out that little addiction occurs without prior marijuana use; those who say "no" point out that less than half of all marijuana users ever subsequently use any other illicit drug. The first group calls marijuana the "stepping stone" to addiction. If it is, then cigarettes and alcohol are certainly the "stepping stones" to marijuana use, and so indirectly to the use of hard drugs. But the metaphor of the "stepping stone" is an inappropriate one. While few young people use marijuana without first trying cigarettes and alcohol, and few use sedatives, stimulants, hallucinogens, or narcotics without first trying marijuana, it is not that they move *from* legal drugs to marijuana, or *from* marijuana to another drug, as one moves from one stepping stone to the next; the pattern is one of accretion, not succession. The drugs of initiation, except for inhalants, are not abandoned when new drugs are tried. New drugs simply constitute an enlargement of the drug repertoire. The later acquired drugs, indeed, actually *preserve* the use of the earlier drug. When we interviewed young black men in their 30s,[11] the only ones still using marijuana were those who had moved on to hard drugs. Those who had used only marijuana had given it up in their 20s.

Motivations for Use

One may wonder what persuades young people to try drugs, and whether motivations differ for different types of drugs. John O'Donnell[12] found the principal motivation for use of *all* types of drugs is pleasure — achieving a *high*. This was also the principal motivation for the use of narcotics in Vietnam.[13] But pleasure is by no means the only purpose for which drugs are used illicitly. Stimulants also are used to achieve alertness by youths worried about studying for examinations and staying awake during long drives. Sedatives, alcohol, marijuana, and narcotics are all used as aids to falling asleep. Marijuana, LSD, and cocaine are enjoyed because they heighten ordinary experience, such as the experience of music, taste experiences, and sexual experience. Alcohol, marijuana, and heroin are seen as helpful in avoiding boredom. Sedatives and heroin are used by some to numb awareness of current problems, and all drugs are sometimes used as a result of social pressure rather than to benefit from any pharmacological effect of the drug.

Heavy Drug Use

The results we have presented so far refer to *any* use of a particular category of drugs in the adolescent's lifetime. While the number of users of alcohol and marijuana may seem staggering, we should not infer that most young people use the substances frequently enough to create problems for themselves. As Figure 1 shows, only cigarettes currently are being used on a daily basis by at least one-fifth of young people during their last year of high school; 9% were daily marijuana users, and 6% were daily drinkers. No other drug was being used on a daily basis by even 1% of young people.

If daily use rates are low, while *ever used* rates are high, then it must be possible for many youths to use drugs occasionally, even hard drugs, without becoming dependent on them. This inference illustrates one of the most important uses of epidemiology: dispelling myths common not only among the general population, but among drug scientists as well. Heroin has a reputation for being a very dangerous drug. Its use was thought to lead rapidly to addiction, and addiction to heroin was thought to be well nigh incurable. If this were actually the case, then most young people who reported ever having used heroin should also report being daily users at the time of the survey. But in fact, heroin use by adolescents was no more likely to be recent or to have progressed to daily use than was the case for any other drug (Table 3).

TABLE 3

Recent Use of Drugs Used in the Current Year (Johnston, 1980)

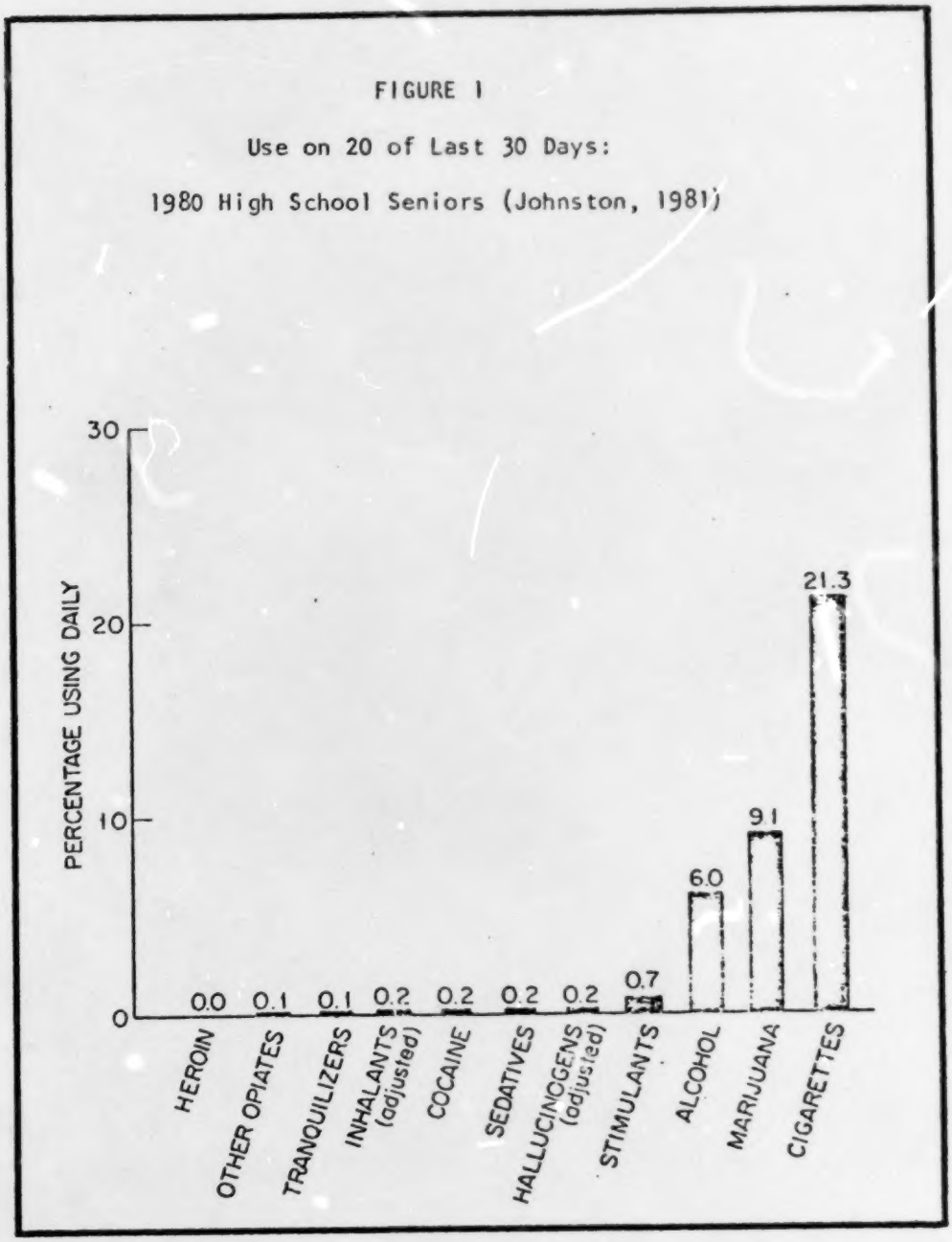
		Percent of Users in Last Year With:	
Drugs Used in Last Year in Order of Number of Users	% Used in In Last Year	*Any* Use in the Last Month	Use on 20+ Days in the Last Month
Alcohol	88	82	7
Marijuana	49	69	19
Stimulants	21	58	3
Cocaine	12	42	2
Sedatives	10	47	2
Hallucinogens	9	40	2
Tranquilizers	9	36	1
Opiates Other Than Heroin	6	38	2
Inhalants	5	30	3
Heroin	.5	40	0

Among high school seniors who had used heroin at any time in the year before interview, only 40% had used it within the month before interview, a rate very similar to that found for users of most other drugs. Three drugs – marijuana, stimulants, and alcohol – were all more likely than heroin to be continued if ever used.

FIGURE 1

Use on 20 of Last 30 Days:

1980 High School Seniors (Johnston, 1981)



Further, none of the seniors who had ever used heroin were now daily users. Thus, dangers of rapid addiction to heroin, or indeed to any hard drug, would seem to be considerably less than had been feared.

One interpretation of these findings might be simply that they show that the daily use of hard drugs is incompatible with attending high school. Luckily, we also have John O'Donnell's study of a general sample of young men and the Vietnam study. John O'Donnell also found that only one-third of those who had used heroin in the last year had used any in the last month, and less than 5% had used any in the last day. Similarly, even among Vietnam veterans who had been addicted to heroin in Vietnam, only 27% of those who resumed heroin use after return became addicted within 3 years of follow-up.[14] It is not clear why heroin has so much less addictive power in the general population than one would expect on the basis of experiments in the laboratory, where animals can be rapidly addicted to heroin. Our current guess is that the quality of heroin available on the streets of the United States is so poor and so erratic that few users get a large enough dose consistently enough to develop addiction.

Trends in Use

The greatest concern in the United States over the use of drugs by young people was at the end of the 1960s and beginning of the 1970s. The concern over drug use then quieted down somewhat, but seems to have begun to rise again. This might suggest that public response fluctuates with drug use. This is only approximately the case. The concern in the late 1960s and early 1970s was certainly triggered by a sudden large increase in illicit drug use by youth. But the excitement declined while drug use continued to escalate between 1975 and 1979. During that period, marijuana experience rose from 47% of high school seniors having ever used it in 1975 to 60% by 1979 (Table 4). Use of cocaine also increased from 9% to 16%, and other stimulants from 22% to 26%. It is true that other drugs did not show a similar increase in popularity. The use of heroin, sedatives, and hallucinogens has declined slightly, but there has hardly been a sufficient drop to explain the decline in public concern. The one success story is cigarette use, which appears to have peaked in 1977 and to be declining since, although it is certainly too early for complacency with over 70% of students still experimenting with smoking.

To try to understand why public concern seemed to subside while rates of drug use were still increasing, we considered the possibility that the rising rates were attributable entirely to the spread of use to regions of the country not previously affected, while use began to decline in the cities where the epidemic began. Such a pattern would justify relaxation of concern, since it would suggest that within a short time the national use figure will have peaked, soon to be followed by an overall decline.

In the early '60s, drug use in the United States was chiefly a phenomenon of large coastal cities. New York probably had the highest rate in the country. The coasts and large cities still have the highest rates of use by adolescents, but rates are becoming more uniform by regions of the country and by city size. But spread to new areas was *not* accompanied by declining use in areas where the epidemic began.

TABLE 4

Trends in Lifetime Prevalence of Use:
High School Seniors
(Lloyd Johnston)

	Percent Ever Used:					
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980
N =	(9,400)	(15,400)	(17,100)	(17,800)	(15,500)	(15,900)
Increasing						
Marijuana	47	53	56	59	60	60
Cocaine	9	10	11	13	15	16
Stimulants	22	23	23	23	24	26
Decreasing						
Heroin	2	2	2	2	1	1
Sedatives	18	18	17	16	15	15
Hallucinogens	16	15	14	14	14	13
Peaked						
Cigarettes	74	75	76	75	74	71
Stabilized						
Alcohol	90	92	93	93	93	93

As Figure 2 shows, use outside large cities has been growing faster than use within them, but the trend everywhere remained upward through 1979. In large metropolitan areas in 1979, 61% of high school seniors had tried marijuana, and in smaller cities, 55% had (just the rate found in large cities 5 years earlier). It is only in 1980 that there seems to be a small amount of evidence that drug use may have peaked and begun to decline; yet, the degree of public concern appears higher today than it was 2 years ago when the trend was steadily upward.

Correlates and Predictors of Drug Use

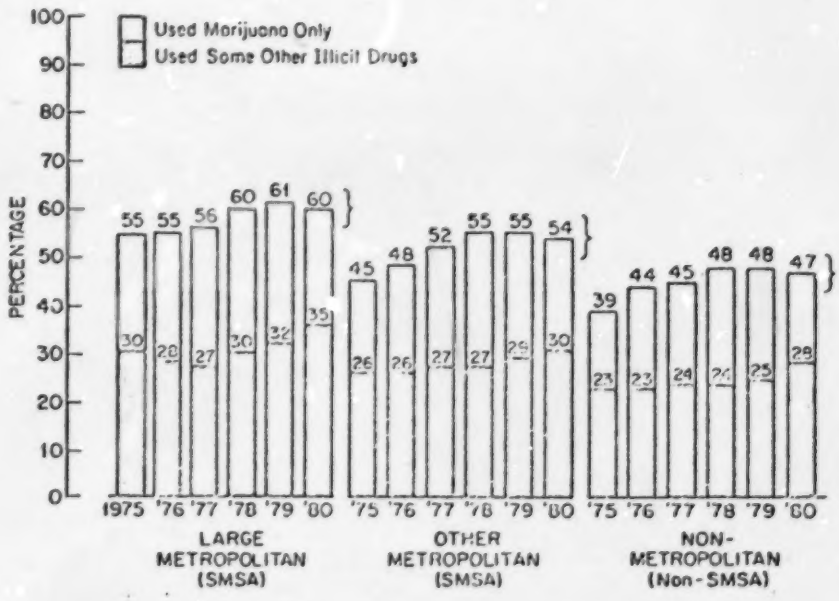
In most recent studies, drug use by adolescents has been shown to be associated with other forms of adolescent deviance, such as skipping school, drinking, early sex experience, and delinquent behavior.[15,16,17]

As drug use becomes increasingly common, one wonders whether those associations remain valid. We can examine that issue only indirectly in Lloyd Johnston's study,[18] since he did not provide direct evidence about deviance. He did, however, provide information about the sex distribution of users.

FIGURE 2

Small Towns Are Catching Up To

Large Cities in Marijuana Experience



NOTES: The bracket near the top of a bar indicates the lower and upper limits of the 95% confidence interval.

Use of "some other illicit drugs" includes any use of hallucinogens, cocaine, and heroin, or any use which is not under a doctor's orders of other opiates, stimulants, sedatives, or tranquilizers.

Sex Differences. As is true of other forms of deviance, adolescent drinking and drug use have been reported for more boys than girls. If deviance plays a lesser role in drug use as drug use becomes more common, one might expect the gap between the sexes to close. So far, there is no strong evidence that the gap for marijuana is closing. Boys still exceed girls in marijuana use by about as much as they did 6 years previously (Figure 3). Indeed, differences between the sexes actually seem to increase with respect to the *daily* use of marijuana (Figure 4). Boys exceeded girls by more in 1980 than in 1975 or 1976 with respect to legal drugs; the sex difference seems reasonably steady for alcohol, but for daily cigarette use rates have not only converged, but more girls than boys are now smoking. They are also more often tranquilizer users and do not differ from boys in their use of stimulants.

This indirect evidence is not very informative. Two commonly used drugs – marijuana and alcohol – do not show the convergence between the sexes that one might anticipate with redefinition of use as nondeviant, while the more *deviant* drugs – tranquilizers and sedatives – do show convergence.

Socioeconomic Status. Another avenue of indirect evidence might be socioeconomic status, as reflected in social class and ethnic group. Serious deviance, as expressed in official delinquency, is found more commonly among the children of the poor, and particularly the black urban poor. If drug use is becoming less deviant, it should move from an association with low status among ethnic minority groups toward an absence of class and ethnic identification. Blacks and Hispanics clearly are overrepresented in treatment populations, and treated drug users are also predominantly lower class. General population samples of youth have not shown the same ratios found in treated samples. Among high school seniors, *more* whites than blacks used alcohol (95% vs. 84%) and marijuana (61% vs. 52%), and they differ little in cigarette use (72% vs. 73%).

Unfortunately, measures of socioeconomic status are largely absent from large-scale surveys of young people. Lloyd Johnston, for example, presented trends in prevalence by only one status indicator – college plans – a variable that in part may be affected by drug use as well as predict it. In any case, he found no evidence for convergence here: rates of marijuana experience have been rising for both college degree-oriented and nondegree-oriented seniors, and the difference between them is approximately constant.

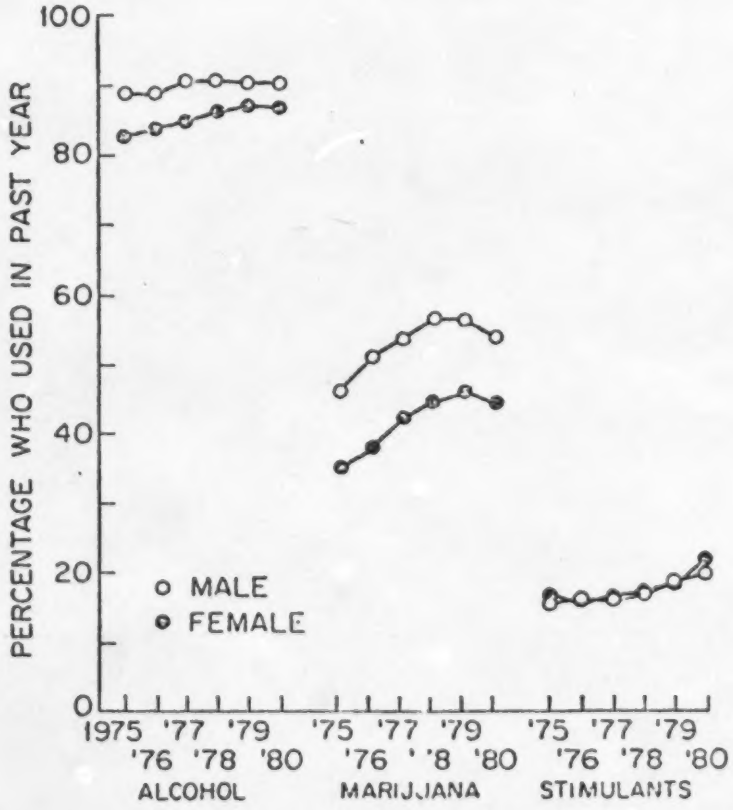
Other studies that present more complete socioeconomic data do not provide the trend information necessary to establish convergence between social classes, but lower social class status is not regularly found to be associated with drug use. In our study of young black men, for example, we found the family occupational status of young drug users to be slightly higher than that of their fellow students.[19] Similarly, in our study of Vietnam veterans and matched controls, there was no association between low socioeconomic status and the use of illicit drugs.[20] These results may only show that drugs are expensive and that the poorest adolescents cannot afford them.

In short, socioeconomic data do not suggest that drug use is like other forms of adolescent deviance, and therefore we cannot use such data to show a change in the social acceptability of drugs.

FIGURE 3

Four Cohorts of High School

Senior Boys and Girls: Any Use in Last Year (Johnston, 1981)

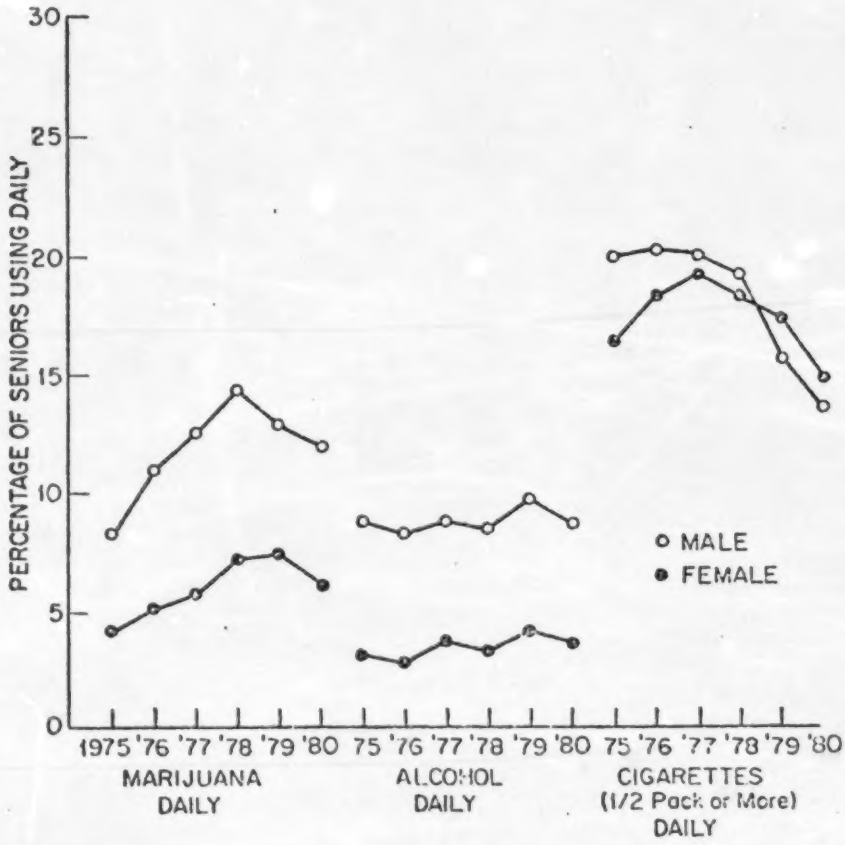


O-11

FIGURE 4

Four Cohorts of High School

Senior Boys and Girls: Use on 20 of Last 30 Days



NOTE: Daily use for alcohol and marijuana is defined as use on 20 or more occasions in the past thirty days. Daily use of cigarettes is defined as smoking a half-pack or more per day in the past thirty days.

Drug Users Compared with Delinquents

Johnston's studies reported no measures of behavior that could serve as direct measures of official or unofficial delinquency. However, many other studies[21,22] have found that young drug users are more delinquent than other students. Further, like delinquents, they are less interested in school achievement and religion and less close to their parents than other students. They differ from delinquents in their identification with social protest.

Another way in which they differ from delinquents is in their good peer relationships. In the early 1960s, it was sometimes hypothesized that adolescent drug users were using the narcotizing effect of drugs to escape from difficult interpersonal relationships. Quite contrary results have been found since in every study looking at the relationship between drug users and their peers. Their relationships with peers are usually positive and normal. Indeed, the first drug used is ordinarily a gift from a friend. Without good peer relationships, they would not have the opportunity to start drug use. The typical adolescent delinquent, on the other hand, is often unpopular with his contemporaries.

There are also interesting differences between drug users and delinquents in terms of IQ and early school behavior. As Table 5 shows, drug abuse is not associated with the slightly depressed IQ that is common among delinquents. The upper part of the Table shows the relationships between IQ in elementary school and adolescent drug use, delinquency, and high school dropout in our study of St. Louis-born young black men. These young men were selected for IQs of 85 or higher as measured in elementary school. At the bottom of Table 5, the same information appears for our sample of Vietnam veterans. Lacking an elementary school IQ test, we had to use

TABLE 5

IQ and Three Forms of Adolescent Deviance:
Drug Use, Delinquency, and Dropout

		Young Black Men		
		Drugs	Delinquency	Dropout
IQ	N	%	%	%
85-89	(53)	22	51	55
90-99	(83)	15	32	33
100-109	(57)	26	38	39
110+	(28)	31	33	33
		Veterans		
		Drugs	Delinquency	Dropout
IQ	N	%	%	%
< 90	(136)	17	26	43
90-99	(103)	20	24	37
100-109	(97)	27	35	20
110+	(217)	23	32	10

results of tests given by the Army at the time of induction. It is noteworthy that in both samples, drug users tend to have slightly higher IQs than average, although differences are not large. Among the young black men, both high school dropout and delinquency are associated with a slightly low IQ; among Vietnam veterans, high school dropout is associated with a low IQ, but delinquency is not. (It may be the case that if a young man had both a low IQ and a record of delinquency, he would not have been admitted into the service.)

The black adolescents who used drugs also differed from delinquents and dropouts in *not* having had serious school problems in their first school years (grades 1 to 8). In this sample, excessive absence and being held back in elementary school, typically beginning in grades 1 and 2, forecast high school dropout and delinquency, but not drug abuse (Table 6).

TABLE 6

Elementary School Performance as a Predictor of Three Forms of Adolescent Onset Deviance in Young Black Men: Drug Use, Delinquency, and Dropout

Elementary School Problems	N	Drugs %	Delinquency %	Dropout %
Both Held Back & Truant	(53)	24	62	69
Held Back	(56)	24	37	28
Truant	(26)	14	22	34
Neither	(88)	20	28	30

Once these young men reached adolescence, however, it became almost impossible to distinguish the behavior patterns of drug users from those of delinquents and dropouts. All did poorly in high school. Like delinquents and dropouts, drug users were typically *underachievers* – that is, they made poorer grades in high school than their IQ tests showed them to be capable of (Table 7).

TABLE 7

Underachievement and Adolescent Deviance in Young Black Men

Percent with Adolescent:	Achievers (92)	Non-achievers (129)
– drug abuse	10	30***
– dropout	19	54***
– delinquency	27	46**

** $p < .01$
*** $p < .001$

Further, the adult outcomes of adolescent drug users are as disturbed as those of dropouts and delinquents, and worse than the outcomes of children with early school problems (Table 8). The association of drug use in adolescence with later difficulties found for young black men is replicated in the Vietnam veteran follow-up (right-hand columns of Table 8). Adult outcomes were measured with respect to eight types of problem: crime, unemployment, excessive drinking, heavy drug use, marital disruption, violence, vagrancy, and financial difficulties.

TABLE 8

Child and Adolescent Deviance as Predictors of Adult Deviance

	Proportion with 3+ Adult Deviance							
	Young Black Men				Veterans			
Adolescent Behaviors	Present		Absent		Present		Absent	
	N	%	N	%	N	%	N	%
Drugs	(48)	49	(175)	15 ***	(125)	47	(446)	13 ***
Dropout	(87)	35	(133)	15 ***	(146)	42	(425)	14 ***
Delinquency	(85)	38	(138)	13 ***	(166)	28	(405)	18 **
High School Underachievement	(131)	28	(92)	15 *	- not available -			
Elementary School Held Back and Truant	(53)	33	(170)	19 *	- not available -			

* $p < .05$

** $p < .01$

*** $p < .001$

One might expect that the increased risk of adult problems among adolescent drug users required their continuing drug use. Table 9 shows there was an association between veterans' adolescent drug use and later outcomes, even for those who had used no illicit drugs in the 2 years before interview. Although rates of recent problems were much lower in those who had discontinued drug use, men who had used drugs in adolescence but did not continue them had at least three of these adult behavior problems in 18% of cases, as compared with 7% of those who did not use drugs in adolescence. Similarly, those who continued drug use had more adult problems if their drug use began in adolescence than if it began later.

TABLE 9

Do the Long-Term Effects of Adolescent Drug Use Require Current Use by Veterans?

	Proportion with Three or More Adult Behavior Problems			
	Little or No Drug Use Last Two Years		Used Two or More Drugs* Within Two years	
	N	%	N	%
Used Drugs in Adolescence	(28)	18 *	(97)	55 **
Did Not	(342)	7	(104)	35

	No Arrests Last Two Years		Arrested Within Two Years	
	N	%	N	%
Arrest in Adolescence	(124)	18 **	(14)	61
Not Arrested	(320)	7	(85)	55

* $p < .05$

** $p < .01$

* Of Opiates, Amphetamines, Barbiturates, and Marijuana.

The Significance of Recent Drug Trends

The picture that we have discovered is a troubling one. Adolescent drug use often occurs in young people whose early school records look promising, who get along well with their peers, who have better-than-average IQs, who are not economically disadvantaged, and who are interested in social issues. Despite these advantages, their adolescent and adult pictures look very much like those of the typical child with conduct disorder who has a slightly low IQ, comes from a lower status family, has problems getting along with peers, and has experienced truancy and failure in elementary school. One must wonder, therefore, if illicit drugs might have lasting consequences when used by immature persons. Our studies of young black men and Vietnam veterans indicated that drug use with late onset (after 19) had little prognostic significance.[23,24] Men beginning drug use late typically either did not

become dependent, or did so only transiently without later adverse social effects. We cannot, however, be so sanguine about the use of drugs and alcohol beginning early. This is of special concern because drug use is not only common among children, but in the last few years seems to have been reaching down into younger age groups. Of course, it may be that the adverse adolescent and adult outcomes we have found are not the effects of drugs themselves, but only of some underlying set of predispositions and attitudes that have not yet been measured. Until we have evidence that this *is* the case, however, we can only recommend a cautious approach: that governments and families attempt to limit adolescents' access to drugs, whether licit or illicit.

Yet there is comfort, perhaps, in the fact that rates of illicit drug use for the first time this year did not continue their steady upward pace. Perhaps the same forces that have brought a conservative turn to our economic policies and a revival of fundamentalist religious views have begun to affect the attitude of young people toward drugs. Surely it is too early to say. The decline is small, and stabilization or decline is not found for *all* drugs. Some still are gaining increasing proportions of adolescent users.

Unfortunately, the abundance of studies of adolescent drug use still have not explained the cause of use clearly enough to allow us either to predict the future or to design interventions or preventive strategies that we confidently can predict will work.

References

1. Johnston, L., Bachman, J.G., & O'Malley, L.D. *Drugs and the class of '78: Behaviors, attitudes and recent national trends.* Rockville, MD: National Institute on Drug Abuse, 1979.
2. O'Donnell, J.A., Voss, H.L., Clayton, R.R., Slatin, G.T., & Room, R.G.W. *Young men and drugs – A nationwide survey.* NIDA Research Monograph 5. Rockville, MD: National Institute on Drug Abuse, 1976.
3. Robins, L.N., & Murphy, G.E. Drug use in a normal population of young Negro men. *American Journal of Public Health,* 1967, 57, 1580-1596.
4. Robins, L.N. *The Vietnam drug user returns.* Special Action Office Monograph, Series A, No. 2. Washington, DC: U.S. Government Printing Office, 1974.
5. Kandel, D., Single, E., & Kessler, R. The epidemiology of drug use among New York State high school students: Distribution, trends and change in rates of use. *American Journal of Public Health,* 1976, 66, 43-53.
6. Jessor, R., & Jessor, S.L. *Problem behavior and psychosocial development – A longitudinal study of youth.* New York, NY: Academic Press, 1977.
7. Smith, G.M., & Fogg, C.P. Psychological predictors of early use, late use, and non-use of marijuana among teenage students. In D. Kandel (Ed.), *Longitudinal research on drug use: Empirical findings and methodological issues.* Washington, DC: Hemisphere-Wiley, 1978. Pp. 101-113.
8. O'Donnell, J.A. *et al.* (see 2 above).

9. Robins, L.N. Interaction of setting and predisposition in explaining novel behavior: Drug initiations before, in, and after Vietnam. In D. Kandel (Ed.), *Longitudinal research on drug use: Empirical findings and methodological issues.* Washington, DC: Hemisphere-Wiley, 1978. Pp. 179-196.
10. Kandel, D., & Faust, R. Sequences and stages in patterns of adolescent drug use. *Archives of General Psychiatry,* 1975, 32, 923-932.
11. Robins, L.N., & Murphy, G. (see 3 above).
12. O'Donnell, J.A. *et al.* (see 2 above).
13. Robins, L.N., Helzer, J.E., Hesselbrock, E., & Wish, E. Vietnam veterans three years after Vietnam: How our study changed our view of heroin. In, *Problems of drug dependence 1977* and in L. Brill & C. Winick (Eds.), *Yearbook of substance abuse.* Human Sciences Press, in press.
14. Johnston, L. *et al.* (see 1 above).
15. Jessor, R. & Jessor, S.L. (see 6 above).
16. Robins, L.N., & Wish, E. Childhood deviance as a developmental process: A study of 223 urban black men from birth to 18. *Social Forces,* 1977, 56, 448-473; "Errata," 1978, 56, 999.
17. Kandel, D. *et al.* (see 5 above).
18. Johnston, L. *et al.* (see 1 above).
18a. Bachman, J.E., O'Malley, L.D., & Johnston, P.M. Monitoring the future, 1980. *National Survey on Drug Abuse, 1977.* Ann Arbor, MI: Institute for Social Research, 1981.
19. Robins, L.N., & Murphy, G. (see 3 above).
20. Robins, L.N., Hesselbrock, M., Wish, E., & Helzer, J.E. Polydrug and alcohol use by veterans and nonveterans. In D.E. Smith, S.M. Anderson, M. Buxton, N. Gottlieb, W. Harvey, & T. Chung (Eds.), *A multicultural view of drug abuse.* Cambridge, MA: Schenkman, 1978.
21. Jessor, R., & Jessor, S.L. (see 6 above).
22. Robins, L.N., & Wish, E. (see 16 above).
23. Robins, L.N., Darvish, H., & Murphy, G. The long-term outcomes for adolescent drug users: A follow-up study of 76 users and 146 non-users. In J. Zubin & A. Freedman (Eds.), *Psychopathology of adolescence.* New York, NY: Grune and Stratton, 1970. Pp. 179-196.
24. Robins, L.N., & Helzer, J.E. Drug use among Vietnam veterans – Three years later. *Medical World News – Psychiatry,* 1975, 16(23), 44-49.